



16 October 2003

Mr Rod Anderson  
Chair  
LWBC Task Group on Management  
of Climate Change Impacts on Biodiversity

By e-mail  
[chm@ea.gov.au](mailto:chm@ea.gov.au)

Dear Mr Anderson

### **Developing a National Biodiversity Climate Change Action Plan Submissions on the Consultation Paper ("Paper")**

The submissions contained in this letter relate to the questions and other general issues raised by the material presented in the above consultation paper. These have been compiled by:

- Professor David Farrier (Law);
- Professor Rob Whelan (Dean of Science); and
- David Jones (PhD law student examining legal and policy issues for integrating climate change with biodiversity, salinity and other environmental issues in Australia. Also environmental solicitor with Baker & McKenzie solicitors).

*A copy of a relevant paper prepared by David is attached for your reference. The paper addresses in much greater detail some of the general concerns highlighted in this submission, and those raised by the specific questions in the Consultation Paper. David's paper is currently being published by Climate Policy Journal, and is therefore not yet available in public form in the attached format, but for your consideration only. Please contact David at [david.jones@bakernet.com](mailto:david.jones@bakernet.com) if you require a publication version of the article.*

The submission is broken up into two sections, firstly addressing general issues of concern in the Paper, and secondly referring to some of the specific questions posed in the Paper. Of its nature, the first section actually touches on some of the issues raised by the more specific questions posed in the paper, but these have not necessarily been identified.

## **1. General Issues**

### **1.1 Scientific Uncertainty**

- 1.1.1 There are extensive comments in the Paper relating to scientific uncertainty in both climate change and biodiversity disciplines. The need to address these before taking any significant actions is emphasised, however there are no references made to the use of the precautionary principle when decisions about future land use are being made, or appropriate policies being developed.

- 1.1.2 Climate change and biodiversity are both clearly areas in which we have enough information to trigger the operation of the principle in relation to particular decisions on land use – for example the clearing of vegetation. In the absence of a clear commitment to the use of the precautionary principle, it is highly unlikely that the people making decisions on land use will attribute any constructive weight to the predicted impact of climate change on biodiversity.
- 1.1.3 One practical example of a precautionary approach is that taken by the Victorian Department of Sustainability and Environment, which has created various policy mechanisms for dealing with biodiversity conservation,<sup>1</sup> and advocates a “safe minimum standard” policy response in the face of inadequate information and scientific knowledge.

## **1.2 Reducing Pressures of Threatening Processes**

- 1.2.1 We strongly support the argument made at page 4 that “the most effective non-abatement action for reducing the impacts of climate change on biodiversity is to reduce the pressure of other threatening processes”. Vegetation clearance is the most obvious threatening process in this context. It is not only a directly threatening process in terms of biodiversity, it is also a causal factor in terms of climate change.
- 1.2.2 By conserving native vegetation, we conserve biological diversity, remove a causal factor in terms of enhanced greenhouse impacts, provide a “carbon sink” to assist in the management of inevitable climate change and in many areas, prevent or abate salinisation. The role of native vegetation in relation to salinity is particularly important because salinity prevention and remediation is a key driver of existing policy, and considerably more persuasive at a political level than the more elusive notion involved in warding off the uncertain impacts of climate change on biodiversity.

## **1.3 Ecosystems versus Species for Biodiversity Measurement**

- 1.3.1 The very important focus on *ecosystems* in Strategy 2 is out of line with the Decision Analysis Approach outlined in Appendix D which at first sight seems to suggest that individual *species* should be used as a surrogate for biodiversity because data on ecosystems is less available. There is an attempt to clarify this at p 22 (“However the focus is not intended to be on threatened species per se”, etc), but this needs further explication and highlighting. Note that the original document from which this extract is taken did not emphasise conservation at the species level but recommended that “the Commonwealth Government urgently work with the States and Territories to limit broad-scale clearing to those instances where the proponent can demonstrate that regional biodiversity and hydrological objectives are not comprised”.<sup>2</sup> (This represents a precautionary approach in line with the comments made above at 1.1).

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<sup>1</sup> Gary Stoneham *et al*, *Mechanisms for Biodiversity Conservation on Private Land*, prepared for Victorian Department of Natural Resources and Environment, (July 2000).

<sup>2</sup> Steve Morton *et al*, *Sustaining our Natural Systems and Biodiversity: an independent report to the Prime Minister’s Science, Engineering and Innovation Council* (2002).

- 1.3.2 We recognise that the ideas of population, species, community and ecosystem are all human constructs to some degree and are increasingly problematic to evaluate when moving from the simplest (population) to the most complex (ecosystem). However, we are of the view that artificial results occur if reliance is placed on the simpler levels to formulate biodiversity priorities. There is a growing recognition that it is only at the more complex levels that effective and comprehensive actions can be taken. Further comment is contained at point 2.3 below.

## 1.4 Providing Linkages Between Policy Measures

- 1.4.1 The Paper recognises the need to link developing climate change policy with existing and future biodiversity policies. It also needs to recognise more explicitly the potential links with *other* natural resource issues such as salinity and land management. The policy frameworks for all of these are developing across the country. While full integration is highly unlikely and to some extent impractical, there needs to be a clear recognition among the various systems of the potential for overlaps, and mechanisms to address both positive and negative interactions that may occur.
- 1.4.2 The Secretariat of the CBD has done this extensively,<sup>3</sup> to a greater degree than seems to be acknowledged in the Paper. Importantly, while the CBD has justifiably concentrated on the need to incorporate biodiversity issues when implementing other environmental treaties, it is also leading the move towards integration with much broader areas such as desertification and international trade.
- 1.4.3 Strategies such as the Australian journal referred to in Strategy 3.3, need to be expanded upon to address these additional issues. Contributions to such a journal could be made from various sectors of environmental management, not just climate change and biodiversity.

## 2. Submissions Addressing Specific Questions

### 2.1 Question 4

- 2.1.1 It appears that there is a page missing from Strategy 1 (p7). However, we can make the general point in response to **Question 4** that impacts of climate change should be considered at the level of the land use planning systems which regulate development, including controls on clearance of native vegetation. These systems regulate land use across the landscape, and we strongly advocate such a landscape perspective.
- 2.1.2 This perspective comes through to some degree in Strategy 2, but there is still a good deal of preoccupation with the National Reserve System, which is increasingly vulnerable because of its inability to grapple with the issue of private land. This is particularly the case in Australia where an estimated 85% of vegetation in the highest

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<sup>3</sup> See for example Executive Secretary Convention on Biological Diversity, *Climate Change and Biological Diversity: Cooperation between the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change*, 27 October 2000 (A note presented at the UNFCCC Conference of the Parties, 6th Session part 1, The Hague, 13-24 November 2000).

conservation bracket is located on private land (and therefore outside any potential government reserve system).<sup>4</sup>

2.1.3 The development of natural resource trading systems, including existing salinity trading and proposed future carbon and biodiversity trading instruments, are also key mechanisms for the consideration of climate change impacts on biodiversity. Failing to build integration considerations into these developing systems could mean for example, that actions to address climate change problems (eg. Carbon trading), could themselves have inadvertent negative impacts on biodiversity

## 2.2 **Question 5**

2.2.1 By way of reinforcing our point made in 1.1 above, planners and decision makers should be able to take some form of “precautionary” action even now, based on the information and potential risks that are known. There is a clear need for better information in both biodiversity and climate change areas, but emphasising these requirements is likely to lead to inaction while that information is gathered, rather than preventative action which can then be refined as better and more comprehensive information comes to hand.

## 2.3 **Question 7**

2.3.1 As discussed at point 1.3 above, there appear to be a number of problems with the species-specific approach used in setting priorities for biodiversity conservation. The broader but ultimately more representative ecosystem approaches are preferable.

2.3.2 There are numerous examples of systems that could be used as alternatives to (or in addition to) the Decision Analysis presented in Appendix D. As the Paper recognises, it is important for some sort of “unit” or system for measuring biodiversity to be calculated, in order to allow priorities to be determined. One such tool includes the habitat hectares approach.<sup>5</sup>

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Please contact David Jones on the numbers / email below for any questions in relation to the content of the above submissions or the Attachment to this paper.

Kind Regards,

**David Farrier, Rob Whelan & David Jones**

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<sup>4</sup> R. L. Pressey *et al*, 'Using abiotic data for conservation assessments over extensive regions: quantitative methods applied across NSW, Australia' (2000) 96 *Biological Conservation* 55.

<sup>5</sup> David Parkes, Graeme Newell and David Cheal, 'Assessing the quality of native vegetation: The 'habitat hectares' approach' (2003) 4(February Supplement) *Ecological Management & Restoration* S29.

## Attachment A

Paper addressing integration issues for your reference.

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# Trading for Climate Without Trading Off on the Environment

An Australian perspective on integration between emissions trading and other environmental objectives and programs

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### Abstract

*With policy and legislative developments for the mitigation of climate change advancing apace, there has been little consideration given to the interactions, both positive and negative, that such instruments are likely to have with other forms of existing environmental management. Australia in particular has a number of environmental problems such as dryland salinity, biodiversity loss and general land management that will be directly impacted by climate change, and the instruments used to try and control its impacts. This paper considers the opportunities and arguments for integration among environmental schemes, using examples from both Australian and International experiences to date.*

### Integrated Environmental Regulation – The Whys and Wherefores

*“The salvation of mankind lies only in making everything the concern of all”<sup>7</sup>*

For 40 years the Japanese system of Total Quality Control has seen company scale integration of all aspects of product and process development towards a single goal. The US Total Quality Management version may fall well behind the Japanese system,<sup>8</sup> but again is based on the same realization that outcomes depend inherently on the interactions of separate but related systems.

Similarly, scientists have recognised for decades that all aspects of the environment are dependent on one another and interact to a significant, and sometimes unpredictable degree.

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<sup>6</sup> The Author would like to acknowledge the valuable contributions of Professor David Farrier, Greg Rose and Land & Water Australia to the ongoing development of his post-graduate thesis, a small part of which is represented in the central concepts that have been presented in this article.

<sup>7</sup> Alexander Solzhenitsyn (Russian novelist) in his 1970 speech, reproduced in Rosalind Fergusson, *The Hamlyn Dictionary of Quotations* (1989) 146.

<sup>8</sup> William C. Culley, *Environmental and Quality Systems Integration* (1998).

For example, there is the meteorologist Edward Lorenz's now famous Butterfly Effect, that the tiny turbulence from a butterfly flapping its wings in Bali could result in a storm over Texas days later.<sup>9</sup> Debates on chaos theory aside,<sup>10</sup> the general conclusion today is that every element of our environment (humans included) is in some sense interacting with everything else.<sup>11</sup>

So what about the institutional and regulatory systems that we use to minimize impacts on our environment? The need to develop links and partnerships between the institutions that work in and administer these systems would seem to be "pure and simple common sense".<sup>12</sup> If the organisations responsible for separate aspects of the environment do not work together, or administer systems that themselves encourage this sort of cooperation, how are they going to address these inherent environmental links? Or avoid taking action that benefits one area while harming another?

It seems that knowing something is common sense and knowing how to put that knowledge into practice, are very different things. Australia (and indeed most of the developed world) has experienced a long history of environmental regulation, mainly to conclude that independent treatment of problems such as air, water and land pollution eventually leads to fragmented administration, confused enforcement and ineffective environmental protection.<sup>13</sup>

Emerging climate change regulatory systems at least in Australia, appear to be traveling in the same direction, ignoring the potential relationships between management of climate change and other aspects of the environment. It is these relationships that will be explored in this paper, with a particular focus on Australia and the ongoing development of emissions trading, where the possibilities for integration with other environmental management systems are the most obvious. It is argued that ignoring these relationships could result in significant

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<sup>9</sup> H. M. Ostringa and B. Krauskopf, 'Visualizing the structure of chaos on the Lorenz system' (2002) 26(5) *Computers and Graphics* 815.

<sup>10</sup> Although for an interesting view of the debate and its relationship to religion, see Tim McCarthy, 'The Future is Now: From chaos to cosmos; exploring the paradigms of interconnectedness' (1993) 29(24) *National Catholic Reporter* 5.

<sup>11</sup> John Briggs, *Fractals: The Patterns of Chaos* (1993).

<sup>12</sup> Salvano Briceno, 'Institutional Linkages among Multilateral Environmental Agreements: An Organizational and Educational Development Perspective' (Paper presented at the International Conference on Synergies and Coordination between Multilateral Environmental Agreements, Tokyo, 14-16 July 1999), 9.

<sup>13</sup> John Cairns Jr, 'The Need for Integrated Environmental Systems Management' in John Cairns Jr and Todd V. Crawford (eds), *Integrated Environmental Management* (1991) 6.

deficiencies in any climate related regulatory scheme that is ultimately adopted. Some international strategies and related initiatives for integration will also be examined in this context.

## **Climate Change as a Driver for Change**

Climate change is integrated with and likely to drive changes in almost every aspect of our environment, potentially in significant and very visible ways and certainly throughout all world economies.<sup>14</sup> In Australasia, predictions are for such varied impacts as increases in human disease, short-term benefits to the agricultural sector and widespread physical and socioeconomic damage along the region's extensive coastal areas.<sup>15</sup>

This means that climate change and its associated policy developments, give rise to unique considerations. First, legislative systems that impose restrictions in the name of mitigating climate change are in a strong position to take advantage of connections with other environmental issues, and to promote behavioural change in those areas. Second, failure to address some of the more significant of these connections runs the risk of resulting in negative or unanticipated interactions with these other issues.

The various market-based mechanisms being considered as part of climate change policy, provide a good example of an introduction to the integration issues that are explored later in this paper. These mechanisms could be used not only to indirectly encourage revegetation of land (i.e. by providing a market incentive to plant forests), but also to assist in dealing with some of the other key environmental problems in Australia including general land management, dryland salinity, biodiversity conservation and water quality.<sup>16</sup> Conversely, ignoring these issues and simply encouraging the establishment of carbon sinks, could increase the demand on water flows in nearby rivers and aquifers (with the potential for losses

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<sup>14</sup> Robert T. Watson, Marufu C. Zinyowera and Richard H. Moss (eds), *The Regional Impacts of Climate Change: An Assessment of Vulnerability* (1998) Special Report of the Intergovernmental Panel on Climate Change.

<sup>15</sup> Reid E. Basher and Barrie Pittock, *Australasia*, in *Ibid* at p107-110.

<sup>16</sup> Not to imply that this has gone at all unnoticed. See for example, M. J. Walsh, 'Maximizing financial support for biodiversity in the emerging Kyoto Protocol markets' (1999) 240(1) *The Science of the Total Environment* 145.

in water quality and river health)<sup>17</sup>, lead to losses in biodiversity, or result in inappropriate allocation of land for competing land practices.

Despite the general argument that “[s]ink enhancement’ may buy some time by offsetting fossil fuel emissions, but it cannot solve the problem”,<sup>18</sup> Australian policy at an international level has shown a particular focus on carbon sinks and a clear intention to rely on them in the future.<sup>19</sup> This makes the sort of integration issues highlighted above, of even greater relevance.

Of course, it needs to be recognized that the what may appear to be an idealist theory of integration will not always be applicable to real life situations, and in many cases for many different reasons, may not be practically achievable. However, the genesis of this paper lies in the concept that integration, whether it be among administering bodies or the laws and policies they implement, or even in a general ‘overall planning’ context is necessary at least to some extent in the case of climate change regulation.

More importantly, integration is not just a ‘theoretical ideal’ – it is a practical option for increasing the efficiency and effectiveness of climate change regulation in the future. In providing the initial framework in support of this position, the following sections look briefly at some domestic and international trends towards practical integration in climate and related fields. The paper then turns to examine the current development of climate change policy in Australia – a necessary position from which to analyze the extent to which these trends are being recognized in that forum.

## **Integration in Practice – Australian & New Zealand**

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<sup>17</sup> P. Jansson, 'Carbon sinks and human freshwater dependence in Stockholm County' (2001) 39(3) *Ecological Economics* 361.

<sup>18</sup> Clive Hamilton, *Running From the Storm - the development of climate change policy in Australia* (2001) 8. Although arguably, even if this is the case and a long term solution can only be achieved by cutting back on fossil fuel use or stopping it altogether, there seems little justification at least in the short term, for refusing to accept this avenue outright. The controversy surrounding carbon sinks is in many respects immaterial to the fact that ultimately, if appropriately carried out and verified, meaningful reductions of greenhouse gas emissions can be achieved through sinks, and for this reason alone they should not be ignored. See for example S. Brown *et al*, 'Changes in the use and management of forests for abating carbon emissions: issues and challenges under the Kyoto Protocol' (2002) 360(1797) *Philosophical Transactions: Mathematical, Physical and Engineering Sciences* 1593.

<sup>19</sup> Again despite the controversy, for the purposes of this paper it has been assumed that carbon sinks will continue to play a significant role in the formative stages of climate change mitigation law and policy.

### ***General Legislative Themes***

In Australia, 'catchment management' and 'environmental flow' strategies for the planning and management of rivers are rapidly gaining popularity in legislation.<sup>20</sup> These are largely based on an integrated or ecosystem approach to regulation.<sup>21</sup>

Similarly, planning legislation in Queensland was until relatively recently, based on the "minimalist approach" – controlling development on a case by case basis, with the only goal really being to prevent urban chaos.<sup>22</sup> Now, the *Integrated Planning Act* has been established as "a framework to integrate planning and development assessment so that development and its effects are managed in a way that is ecologically sustainable".<sup>23</sup> In New South Wales, the originally separate pieces of legislation for Air, Water, Noise and related regulation, have been brought together under the *Protection of the Environment Operations Act*, which includes the broad objective to "protect, restore and enhance the quality of the environment".<sup>24</sup>

### ***New Zealand's Resource Management Act***<sup>25</sup>

In terms of integrated environmental planning and management, this was one of the most progressive pieces of legislation in the world when it was introduced in 1991. Many of its elements arguably remain so today,<sup>26</sup> and it has been said that most of the big issues currently facing Australian policy makers could theoretically be achieved through the RMA mechanisms.<sup>27</sup>

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<sup>20</sup> See for example *Catchment Management Act 1989* (NSW), *Integrated Planning Act 1997* (Qld), *Murray Darling Basin Act 1993* (Cth)

<sup>21</sup> See M. Hillman and G. Brierley, 'Information Needs for Environmental-Flow Allocation: A Case Study from the Lachlan River, New South Wales, Australia' (2002) 92(4) *Annals of the Association of American Geographers* 617 for a useful analysis of the processes involved in ecosystem approaches to environmental planning.

<sup>22</sup> Philippa England, *Integrated Planning in Queensland* (2001).

<sup>23</sup> Long title of the *Integrated Planning Act 1997* (Qld).

<sup>24</sup> *Protection of the Environment Operations Act 1997* (NSW) s3.

<sup>25</sup> *Resource Management Act 1991* (New Zealand).

<sup>26</sup> Raewyn Peart, 'Innovative Approaches to Water Resource Management: a comparison of New Zealand and South African approaches' (2001) 5 *New Zealand Journal of Environmental Law* 127.

<sup>27</sup> B. D. A. Norton and C. J. Miller, 'Some Issues and Options for the Conservation of Native Biodiversity in Rural New Zealand' (2000) 1(1) *Ecological Management & Restoration* 26.

Suggestions that the Act has many faults in its 6 year implementation lead back to the question of whether theory can ‘out-think’ practical reality.<sup>28</sup> However, the structure of the Act, its focus on sustainability and the progressive nature of its intended operation remain unchallenged, with general opinion suggesting that it is problems with institutional and political interest groups,<sup>29</sup> the allocation of resources to appropriate bodies,<sup>30</sup> and failure to utilise particular provisions of the Act<sup>31</sup> that are restricting its operation.

These practical problems of integration are especially important to consider in the case for integrating emissions trading with other environmental markets and management techniques, and they are considered in more detail in the Australian context, later in the paper.

## **Integration in Practice – International Initiatives**

### **Relationships between International Agreements**

Linkages between the Convention on Biological Diversity (CBD)<sup>32</sup>, UN Framework Convention on Climate Change (UNFCCC)<sup>33</sup> and the Convention to Combat Desertification (CCD)<sup>34</sup> have been the subject of much attention, particularly in more recent times. The main identified risk has been that implementing one without reference to the other, could not only cancel out any beneficial actions, but potentially cause damage to one of the other aspects of the environment that the agreements are designed to protect.<sup>35</sup> One clear recognition of this is in the text of the CCD, which states that joint implementation of the Rio Conventions should be undertaken wherever possible.<sup>36</sup>

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<sup>28</sup> J. Gleeson and J. Grundy, 'New Zealand's Planning Revolution Five Years On: A Preliminary Assessment' (1997) 40(3) *Journal of Environmental Planning and Management* 293.

<sup>29</sup> A. Memon, 'Reinstating the Purpose of Planning within New Zealand's Resource Management Act' (2002) 20(3) *Urban Policy and Research* 299.

<sup>30</sup> K. Morgan, 'Progress with Implementing the Environmental Assessment Requirements of the Resource Management Act in New Zealand' (1995) 38(3) *Journal of Environmental Planning and Management* 333.

<sup>31</sup> Royden Somerville, 'A public law response to environmental risk' (2002) 10(2) *Otago Law Review* 143.

<sup>32</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (29 December 1993) ('CBD').

<sup>33</sup> *United Nations Framework Convention on Climate Change*, opened for signature 4 June 1992, (21 March 1994) ('UNFCCC').

<sup>34</sup> *Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa*, opened for signature 14 October 1994, (26 December 1996) ('Convention to Combat Desertification or 'CCD').

<sup>35</sup> United Nations Development Program, *Synergies in International Implementation: The Rio Agreements*, (1997).

<sup>36</sup> Article 8, CCD.

The Secretariat of the CBD has taken the lead on these issues, repeatedly addressing the links at conferences of the parties,<sup>37</sup> calling for the integration of biodiversity considerations in the implementation of the Kyoto Protocol,<sup>38</sup> and urging participating countries to explore ways in which incentive measures promoted through the Kyoto Protocol can be used to support biodiversity conservation objectives.<sup>39</sup>

Many of the CBD COP decisions endorse cooperation at everything from the executive to scientific levels,<sup>40</sup> emphasizing the point briefly made earlier, that integration of environmental initiatives need not necessarily be “total” nor should it be limited to the regulatory level only.

### **Global Environment Facility (GEF)**

The GEF national biodiversity planning guidelines<sup>41</sup> emphasize the practical importance of integrating biodiversity planning and other environmental management efforts. The experience of GEF participants has been that failing to address the underlying causes of biodiversity loss, can mean that conservation measures are unlikely to be successful. These causes can themselves arise out of existing legal systems, policies, or any of a huge range of other economic development sectors that may have traditionally ignored biodiversity altogether.<sup>42</sup>

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<sup>37</sup> For example see Convention on Biological Diversity, *Decision IV/5: The relationship of the Convention with the Commission on Sustainable Development and biodiversity-related conventions, other international agreements, institutions and processes of relevance*, (Conference of the Parties, Fourth Session, Slovak Republic, 4-15 May 1998).

<sup>38</sup> Executive Secretary Convention on Biological Diversity, *Climate Change and Biological Diversity: Cooperation between the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change*, 27 October 2000 (A note presented at the UNFCCC Conference of the Parties, 6th Session part 1, The Hague, 13-24 November 2000).

<sup>39</sup> Convention on Biological Diversity, *Decision IV/5: The relationship of the Convention with the Commission on Sustainable Development and biodiversity-related conventions, other international agreements, institutions and processes of relevance*, (Conference of the Parties, Fourth Session, Slovak Republic, 4-15 May 1998) paragraph 5.

<sup>40</sup> Secretariat of the Convention on Biological Diversity, 'Partner Conventions and Organisations - Background', (Updated 23 January 2002) <<http://www.biodiv.org/convention/partners-background.asp>>, accessed 26 February 2002.

<sup>41</sup> K. Miller and S. Lanou, *National Biodiversity Planning: Guidelines Based on Early Experiences Around the World*, prepared for World Resources Institute, United Nations Environment Program and International Union for Conservation of Nature, (1995).

<sup>42</sup> Michael Wells *et al*, *Interim Assessment of Biodiversity Enabling Activities: National biodiversity strategies and action plans*, prepared for the Global Environment Facility, (December 1999).

Shedding more light on some of the practical problems of integration however, is the fact that despite the recognition of this need, “there are few signs that key sectoral agencies are actually prepared to commit to actions supporting conservation.”<sup>43</sup> So clearly, there are many more adjustments that need to be made on a national basis, to give rise to the ideal of integration in a way that achieves environmental goals and objectives. So what advances has Australia made?

## **Emissions Trading in Australia – The Story So Far**

### **A Note on Australian Constitutional Structure**

Australia’s federal structure can create particular difficulties for regional integration at regulatory, scientific, policy or other levels. With an overarching Commonwealth Government and constitution, each state and territory (there are 8) also has its own government and constitution, complete with state departments, agencies, research bodies and the like.<sup>44</sup> For matters that extend beyond state boundaries, this structure can often lead to blurring and confusion over the lines of responsibility, and potential conflicts between Commonwealth and State bodies.

### **The Australian Greenhouse Office**

The Australian Greenhouse Office (AGO) was established in 1998 as the world's first government agency dedicated to greenhouse emissions reductions. Officially within the Commonwealth environment portfolio, responsibility for the AGO's administration has been shared among various Commonwealth departments, currently including the Minister for Environment and the Minister for Industry, Tourism & Resources. Ministers for Primary Industries & Energy and Finance have also been involved in AGO supervision.

This seems to be a good intersectoral arrangement, further reinforced by the executive order establishing the AGO. This order set out goals including to generally assist Commonwealth

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<sup>43</sup> Ibid., 44, para 183.

<sup>44</sup> For a more thorough examination of how Australia’s constitutional system is arranged, see P. J. Hanks *Constitutional Law in Australia* (1991).

Ministers with greenhouse issues in their various portfolios, and to provide advice on greenhouse issues with a “whole of government perspective”.<sup>45</sup>

However in reality, the AGO has been almost explicitly limited to greenhouse science and policy development independent of current State or Commonwealth environmental systems. Almost all of its public communications are based firmly around greenhouse gas targets and emissions trading feasibility studies.<sup>46</sup> It has certainly considered potential links between greenhouse emissions and other natural resource management issues,<sup>47</sup> however its central policy and regulatory recommendations remain clearly separate from these issues.

Largely separate from Commonwealth policy and emphasising the difficulties with Australia’s federal structure, are a number of developments at State level that either directly relate to climate change, or have the ability to be used in climate change mitigation schemes in the future. These will need to be taken into account if any form of nationally integrated system/s are to be introduced in the future. Some New South Wales schemes (the most significant State-based systems at present) are considered briefly below to illustrate the scope of these developments.

## **New South Wales – State Based Developments**

### *Carbon Sequestration Rights*

Carbon sequestration rights in NSW have been established within a category of legal rights known as “profits a prendre”. Historically, a profit a prendre (“Profit”) is “a right to enter another person’s land and take away part of the soil or the natural produce of the soil.”<sup>48</sup> The *Carbon Rights Legislation Amendment Act 1998*<sup>49</sup> has now made carbon sequestration rights

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<sup>45</sup> 'Australian Greenhouse Office Governance Framework', <<http://www.greenhouse.gov.au/ago/governance.html>>, accessed 10 March 2003.

<sup>46</sup> See for example, Gwen Andrews, 'Climate Change and the Kyoto Protocol' (2000) July *CEDA Bulletin* 54, (edited version of a speech given to the CEDA Seminar "The Cost of Energy", Melbourne, April 2000).

<sup>47</sup> See the AGO website details for an exploration of these at <<http://www.greenhouse.gov.au/land/index.html>> accessed 20 March 2003.

<sup>48</sup> *Australian Softwood Forests Pty Limited v Attorney General (NSW)* (1981) 148 CLR 121 at 130.

<sup>49</sup> Amending the *Conveyancing Act 1919*

a profit, (despite the fact that such a right is more appropriately defined as right to *leave something on land*, rather than take it away).<sup>50</sup>

A carbon sequestration right is defined as “a right conferred on a person by agreement or otherwise to the legal, commercial or other benefit (whether present or future) of carbon sequestration by any existing or future tree or forest on the land after 1990”.<sup>51</sup>

In practical terms, carbon sequestration rights can now be registered over land as distinct legal rights in NSW.<sup>52</sup> This registration carries with it the normal incidents of priority over unregistered and later registered interests that attach to the primary system of land holding in Australia. Similar rights exist under legislation<sup>53</sup> in a number of other Australian States.<sup>53</sup>

#### *The Electricity Retailer’s Benchmarking Scheme*<sup>54</sup>

This is the most advanced greenhouse-related scheme in Australia, introduced through amendments to the *Electricity Supply Act 1995* (NSW) in 2002.<sup>55</sup> It began operation on 1 January 2003, and aims to reduce electricity-related per capita greenhouse gas emissions to 5% below 1989-1990 emissions by 2007, via annually reducing benchmarks. Greenhouse gases currently covered under the scheme include carbon dioxide, methane, nitrous oxide and perfluorocarbon gases.<sup>56</sup> The Scheme is binding on electricity retail suppliers, major customers and generators with contracts to supply electricity directly to customers

The main tradeable instruments that can be utilised under the scheme are NSW Greenhouse Abatement Certificates (NGACs). These can only be created by accredited certificate providers who have reduced emissions through direct improvements in generation processes,

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<sup>50</sup> Peter Butt, 'Carbon Sequestration Rights - a new interest in land?' (1999) 73(April) *The Australian Law Journal* 235.

<sup>51</sup> *Conveyancing Act 1919* (NSW). s.87A. Note the choice of 1990, which is the relatively arbitrary year that has been selected under the Kyoto Protocol as the comparison against which future reductions in greenhouse gas emissions will be calculated.

<sup>52</sup> *Ibid.* s.88

<sup>53</sup> See for example *Forestry Act 1959* (QLD), *Land Title Act 1994* (QLD) s 97E to 97L, *Forestry Rights Act 1996* (Vic). s 11(b) and WA Carbon Rights Taskforce, *Carbon Rights in Western Australia - Discussion Paper*, (11 June 2001) 1.

<sup>54</sup> For details and progress reports, see NSW Government, <<http://www.greenhousegas.nsw.gov.au/>>, accessed 15 March 2003.

<sup>55</sup> *Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002* (NSW) and *Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Regulation 2002* (NSW).

<sup>56</sup> *Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002* (NSW).

demand side reductions (i.e. reducing consumption of electricity), or carbon sequestration through forest plantations in NSW.

The scheme is administered by the Independent Pricing and Regulatory Tribunal (IPART). Benchmarks are reached by purchasing and surrendering the appropriate amount of NGACs to IPART. Penalties for failing to meet benchmarks have been set at \$10.50 per tonne of CO<sub>2</sub>-e.

### *Load Based Licensing*

This scheme is administered under the *Protection of the Environment Operations Act*,<sup>57</sup> and commenced on 1 July 1999. While the main element of the system at the moment is that environmental licence fee calculations are based on levels of pollutants discharged, the legislation establishes a framework for general emissions trading schemes, involving any pollutant.<sup>58</sup>

The Act also allows for “bubble licensing”, where the total emissions from two or more discharge points can be aggregated to achieve an overall target. Such a scheme has to be approved by the Act administrator, the NSW Environment Protection Authority, and is currently in place for Sydney’s water authority’s sewage treatment plants.<sup>59</sup>

## **Climate Change Links – With What and How?**

Some of the potential themes and targets for integration with climate change policy have been touched on above. One thing that is being deliberately avoided in this paper is an impractical attempt to classify a particular range, type or level of integration that will work every time. However, what is advocated is that regulators and policy makers should where possible, take advantage of the many natural linkages between the establishment of an emissions trading scheme, carbon sinks or other greenhouse initiatives, and Australia’s other ongoing environmental problems. For example:

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<sup>57</sup> *Protection of the Environment Operations Act 1998 (NSW)* and *Protection of the Environment Operations (General) Regulations 1998 (NSW)*.

<sup>58</sup> *Protection of the Environment Operations Act 1997 (NSW)*, Part 9.3A

<sup>59</sup> Josh Carmody, 'Emergence of market-based environmental regulation in Australia' (2002) 1(1) *Ecofutures - the Word on Sustainable Development* 44.

- Large plantations cannot be established without impacts on regional water quality or quantity.<sup>60</sup> In Australia, arguments have been made recently that plantation owners should be required to purchase water permits (currently required for irrigators and other large water users under State legislation) particularly where there are a number of competing uses;
- Revegetation of land affected by salinity can improve land fertility by lowering groundwater tables,<sup>61</sup> reducing erosion and run-off, and providing income to land owners without competing with any other land use (ie. avoids planting trees on prime agricultural land);
- Establishment of monoculture plantations can have detrimental impacts on regional biodiversity, especially if clearing of native vegetation has taken place first. In addition, developing science is suggesting that monocultures may be less effective at sequestering carbon dioxide than diverse plantations;<sup>62</sup>
- However, there is also evidence that even in radiata pine forests, provided some remnant areas of native vegetation have been retained, native and biodiverse species may spread out of this remnant vegetation into the forest itself – this is a more complex link and a warning that it will never be as simple as saying that monoculture plantations are always bad in an ecosystem sense;<sup>63</sup>
- The prices for carbon and penalties for excess emissions in any trading market will have a significant impact on whether land clearing for agriculture or grazing will become more or less cost effective than leaving trees in the ground for carbon sequestration, and farming practices will follow this cost.<sup>64</sup>

## **Piggybacking Environmental Benefits**

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<sup>60</sup> J. Lundqvist and M. Falkenmark, 'Drainage Basin Morphology: a starting point for balancing water needs, land use and fishery protection' (2000) 7(1) *Fisheries Management & Ecology* 1.

<sup>61</sup> P. Farrington and R. Salama, 'Controlling dryland salinity by planting trees in the best hydrogeological setting' (1996) 7 *Land Degradation and Development* 183.

<sup>62</sup> P. Reich *et al*, 'Plant diversity enhances ecosystem responses to elevated CO<sub>2</sub> and nitrogen deposition' (2001) 410(6830) *Nature* 809.

<sup>63</sup> Dr Brad Law, 'Biodiversity and planted forests' (2000) August *The Bush Telegraph* 18.

<sup>64</sup> Jacqueline Bredhauer, 'Tree Clearing in Western Queensland - a Cost Benefit Analysis of Carbon Sequestration' (2000) 17(5) *Environmental and Planning Law Journal* 383.

Taking account of the above linkages is not just important from the point of view of avoiding unplanned and potentially negative interactions. Emissions trading represents a key opportunity to “piggyback” long-standing environmental issues such as salinity and biodiversity, onto market incentives and regulatory schemes for greenhouse control

This is particularly obvious from an investment point of view – most environmental issues simply are not attractive to most investors, because significant and immediate economic return is rare. The Kyoto Protocol however, has attracted and will continue to attract the business dollar to reducing greenhouse emissions for many reasons, including:

- A perceived need to avoid penalties being levied at a later date, whether through the purchase of emission permits, fines for non-compliance, or a sudden and uneconomical investment in technology change or carbon sinks;
- To get “ahead of the game” and develop a pool of excess carbon credits that can be sold at a profit to late entrants or those who can not afford to take ameliorative action;
- An opportunity to attract the “green vote” in an atmosphere where environmental issues are becoming increasingly important in consumer choice of product and company;<sup>65</sup>

For these reasons, and despite the relatively early stages of development and ongoing uncertainty with Commonwealth and State policy developments, Australia has been host to a number of significant and highly-publicised “carbon trades”, to date focussing particularly on carbon sinks.<sup>66</sup>

So how would piggybacking work? Taking the carbon sink example, traditionally, farm forestry has not been seen as a viable financial alternative to cropping, even on lands that are otherwise at high risk of dryland salinity.<sup>67</sup> However, it does become so if the forest can

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<sup>65</sup> Penny Wensley, 'Global Trends: The Emergence of International Environmental Law' in Ben Boer, Robert Fowler and Neil Gunningham (eds), *Environmental Outlook, Law and Policy* (1994) 8.

<sup>66</sup> With no legislative scheme to validate the trades themselves in place, these deals have essentially been contractually based, with a provision for registration of rights ‘if and when’ an appropriate scheme comes into force in the future. See for example, Michael Millett, 'Plant now and pollute later deal with Japan', *Sydney Morning Herald* (Sydney), 14 February 2000, 1 and Martijn Wilder, 'The Kyoto Protocol and early action' (2001) 7(2) *The University of New South Wales Law Journal - Forum (The Kyoto Protocol: Politics and Practicalities)* 22.

<sup>67</sup> N. J. Schofield, 'Tree planting for dryland salinity control in Australia' (1992) 20 *Agroforestry Systems* 1.

generate ongoing income through piggybacking of extra environmental benefits. Together with emerging economic models that suggest farm forestry can be carried out successfully in deliberate combination with cropping practices,<sup>68</sup> this sort of integration may be able to change that financial balance.

On land that is already profitable for forestry, integration could be used as a mechanism to “force” investment in salinity and biodiversity issues, where such investment would not otherwise occur. For example, making biodiversity conservation or enhancement a requirement for gaining the maximum credit value out of an established plantation, is essentially encouraging direct investment in biodiversity itself – an investment that very few industries would have been remotely interested in before the potential offered by Kyoto Protocol incentives.

### **Climate Change Links – Australia’s Salinity Issues**

One of the prime examples of integrating carbon sequestration and salinity management in Australia, is that of the salt bush. This is a drought-resistant Australian bush<sup>69</sup> that not only grows in and helps remediate saline soils, but has also been shown to be particularly effective at sequestering carbon dioxide,<sup>70</sup> and to be an excellent grazing food for sheep and cattle.<sup>71</sup>

It is estimated that up to 15 million hectares of the Australian landscape could be affected by dryland salinity without serious changes in land management practices.<sup>72</sup> Opportunities offered by climate change developments have significant potential to assist with these

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<sup>68</sup> Oscar Cacho, Romy Greiner and Lachlan Fulloon, 'An economic analysis of farm forestry as a means of controlling dryland salinity' 45(2) *The Australian Journal of Agricultural and Resource Economics* 233.

<sup>69</sup> The question of whether saltbush could be integrated into the Kyoto Protocol rules (and indeed whether there is any need to, from a purely environmental point of view) is outside the scope of this paper, although the most recent negotiations suggest that there would be scope for an argument to at least be made.

<sup>70</sup> J. Zhu and F. Meinzer, 'Efficiency of C4 photosynthesis in *Atriplex lentiformis* under salinity stress' (1999) 26(1) *Australian Journal of Plant Physiology* 79.

<sup>71</sup> B. E. Warren, C. J. Bunny and L. B. Bryant, 'A preliminary examination of the nutritive value of four saltbush (*Atriplex*) species' (1990) 18 *Proceedings of the Australian Society of Animal Production* 424.

<sup>72</sup> L. Martin and J. Metcalfe, *Assessing the Causes, Impacts, Costs and Management of Dryland Salinity*, prepared for Land & Water Resources Research & Development Corporation, (1998) Occasional Paper No.20/98.

changes, and this has been expressly recognised in salinity policy instruments such as the NSW Salinity Strategy.<sup>73</sup>

### **Climate Change Links – Australia’s Biodiversity Issues**

The vital nature of biodiversity to human and ecosystem life, its potential for future medical advances and other clear arguments for its preservation, are now almost universally taken for granted.<sup>74</sup> There is growing evidence that climate change impacts can weaken the ability of ecosystems to respond to change, and in these circumstances even minor biodiversity losses can lead to the collapse of entire systems, and environmental catastrophes on a major scale.<sup>75</sup>

Exactly what needs to be done in order to prevent this loss of biodiversity however, is not as clear. The general view appears to be that biodiversity conservation is extremely complex, requiring a carefully integrated system of policy, incentives, regulation and specifically targeted action plans.<sup>76</sup>

Australian research has suggested that there are four main principles in working out the best policy mix for managing and conserving biodiversity:<sup>77</sup>

- mixes should motivate communities and industry to conserve biodiversity;
- less interventionist instruments should be preferred to more interventionist instruments;
- financially-attractive instrument mixes are more likely to promote ongoing and active contributions to the conservation of biodiversity; and
- policies should address both direct threats to biodiversity, and underlying causes of these threats such as institutional or market failure, and poorly defined property rights.

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<sup>73</sup> NSW Department of Land and Water Conservation, *Taking on the Challenge: NSW Salinity Strategy*, (August 2000).

<sup>74</sup> See for example D. Curran, 'The conservation of biological diversity on private property in NSW' (2000) 7(1) *Environmental and Planning Law Journal* 34. and D. Saunders and J. West, 'Biodiversity: What is it and why is it critical to agriculture?' (Paper presented at the International Landcare 2000: Changing Landscapes - Shaping Futures Conference, Melbourne, 2-5 March).

<sup>75</sup> E. B. Barbier, J. C. Burgess and C. Folke, *Paradise lost? The ecological economics of biodiversity* (1994).

<sup>76</sup> M.D. Young *et al*, *Reimbursing the Future: An evaluation of motivational, voluntary, price-based, property-right, and regulatory incentives for the conservation of biodiversity*, Biodiversity Series Paper No. 9, prepared for the Commonwealth Department of Environment Sport & Territories, (January 1996).

<sup>77</sup> *Ibid*.

All of these elements have much in common with the literature on climate change mitigation methodology. However, while establishing links between biodiversity and climate change may seem as simple in theory as for salinity, the complexity of biodiversity science highlights the dramatic differences that can occur between theory and practice when it comes to integration.

### **Benchmarking Biodiversity**

Both salinity and greenhouse gas emissions have reasonably measurable units that can be used to quantify the level of activity involved in trading schemes. Biodiversity however, is much more difficult to measure. Various guides have been attempted in the past,<sup>78</sup> with government departments now beginning to work on the more comprehensive methods and systems<sup>79</sup> that will be essential to enable quantities and dollar values to be assigned to biodiversity elements, and ultimately the generation of 'biodiversity credits'.

### **Biodiversity Credits**

It is almost inevitable that changes resulting from climate change will directly impact biodiversity. Flora and fauna that live in coastal or mountain areas, genetically poor communities and species that do not travel or disperse well, are thought to be most at risk from these changes.<sup>80</sup> On the other hand, some species may benefit significantly, and it is likely that there will be new interactions or competition between species as a result of the changes.<sup>81</sup>

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<sup>78</sup> See for example, P. Gibbons, S. Briggs and J. Shields, 'How many credits is your property worth? A proposed biodiversity scoring system' (2001) December *Australian Landcare* 20, R. L. Pressey and A. O. Nichols, 'Efficiency in conservation evaluation scoring versus iterative approaches' (1989) 50 *Biological Conservation* 199 and R L Pressey *et al*, 'Beyond opportunism: key principles for systematic reserve selection' (1993) 8 *Trends in Ecology and Evolution* 124.

<sup>79</sup> Examples include Gary Stoneham *et al*, *Mechanisms for Biodiversity Conservation on Private Land*, prepared for Victorian Department of Natural Resources and Environment, (July 2000) and David Parkes, Graeme Newell and David Cheal, 'Assessing the quality of native vegetation: The 'habitat hectares' approach' (2003) 4 (February Supplement) *Ecological Management & Restoration* S29.

<sup>80</sup> I. M. Mansergh and A. R. Bennett, 'Greenhouse and wildlife management in Victoria' (1989) 2(2) *Common Ground* 14.

<sup>81</sup> C. D. Idso 'Earth's Rising atmospheric CO<sub>2</sub> concentration: Impacts on the biosphere' (2001) 12(4) *Energy and Environment* 287.

While not yet at as sophisticated a stage as the benchmarking schemes, there are growing discussions about the development of “biodiversity credits” in Australia. A credit system that rewards conservation strategies is seen as a necessary incentive for effective conservation.<sup>82</sup> This is particularly the case in Australia where there is an extremely high level of private ownership of land with high biodiversity conservation values (around 85%).<sup>83</sup> The formal development of such a credit scheme would provide further encouragement and opportunity for links with emissions trading and climate related credit schemes, and potentially an enhanced environmental outcome.

### **Integrated Climate Change Schemes – Elements, Issues & Exceptions**

Flowing from the above, there are a variety practical solutions that could be incorporated into a domestic emissions trading scheme, to help achieve some level of integration with existing environmental issues. A broad sample of these solutions could cover:

- “Weighting” of carbon credits for a forestry sinks according to the extent to which they addressed biodiversity, salinity and/or water management issues. For example, failing to actively address these biodiversity priorities, or acting detrimentally to them (eg. by first clearing native forest) might mean only 0% to 20% of the actual carbon sequestered could be claimed as a credit and utilised in an emissions trading system;
- A central authority established for the management of an authentication system for carbon, salinity, biodiversity and any other valuable commodities generated, issuing certificates or bonds for trading, and enforcing any relevant restrictions. Whether or not integration was common between the systems, there would need to be some formula or potential for acquittal of the various credits between different systems;
- Investors could be given concessions such as discounted government services or reduced rental of Crown land, to enable the development of carbon sinks in environmentally degraded areas (such as the Murray Darling Basin), or where they establish a plantation in partnership with salinity investors or renewable technology producers.<sup>84</sup>

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<sup>82</sup> Judson Agius, 'Biodiversity Credits: Creating Missing Markets for Biodiversity' (2001) 18(5) *Environmental and Planning Law Journal* 481.

<sup>83</sup> R. L. Pressey *et al*, 'Using abiotic data for conservation assessments over extensive regions: quantitative methods applied across NSW, Australia' (2000) 96 *Biological Conservation* 55.

<sup>84</sup> For example, the Visy Pulp & Paper Mill in Tumut, which diverts timber construction waste and off-cuts away from landfills to its timber-burning boiler, for generation of the electricity needed to run its pulp and paper mill.

The CBD Secretariat has suggested basic measures for ensuring more general integration of ecosystem processes, aimed at ensuring that links between systems are not ignored. These include that proposed Kyoto projects be subjected to specially tailored environmental impact assessments or otherwise screened to an agreed set of standards, and that all relevant stakeholder groups should be able to participate in assessment processes.<sup>85</sup>

Again, this point emphasizes the fact that integration does not necessarily have to occur at all levels of legislative or policy reform, but should be pursued in any area where it is appropriate and has the potential for positive impacts.

### **Exceptions to Integration? Of Course!**

There will obviously be circumstances where linkages are not necessary, many of which have been touched on above. For example, the proposal of the Australia Institute for a carbon tax of \$20 per tonne to fund a \$500 per year contribution to every adult Australian's superannuation scheme, has very little room for linkages with other environmental issues.<sup>86</sup>

The central argument here is not that integration is necessary in every situation, but that its potential should always be kept in mind and addressed whenever appropriate. One of the key difficulties lies in the question of how to form the necessary institutional, regulatory and organisational links, to reflect and appropriately manage those same and potentially much more obvious synergies in the environment.

### **A Role for Economic Instruments?**

The necessity for these instruments underpins the concepts explored throughout this paper, in the same way as the concept that valuing environmental goods and services is necessary in

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<sup>85</sup> Executive Secretary Convention on Biological Diversity, *Climate Change and Biological Diversity: Cooperation between the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change*, 27 October 2000 (A note presented at the UNFCCC Conference of the Parties, 6th Session part 1, The Hague, 13-24 November 2000).

<sup>86</sup> Clive Hamilton, *The Super-Carbon Scheme: Saving for retirement, saving the environment*, prepared for The Australia Institute, (April 2002).

order for people to understand the value of the environment, underpins the argument for economic instruments themselves.<sup>87</sup>

In the past, economic instruments have been criticised for a number of reasons, including that their flexibility allows poor performers to simply pay a price to continue that performance, rather than making direct reductions in environmental impact.<sup>88</sup> However, indications are that in most circumstances, the economic incentive and this very quality of flexibility, generate greater levels of participation and a much more positive attitude towards compliance than other regulatory systems.<sup>89</sup>

The nature of these sort of incentives under the Kyoto Protocol and related developments, is to a large extent responsible for the particular suitability of climate change mitigation for integration and piggybacking with other environmental concerns in Australia. The scope of the incentives (and the implied negative consequences of being left out of those incentives) has encouraged businesses to act and think about positive environmental actions in a way that has rarely been seen before.

This is by no means an argument that these instruments will achieve all the goals of environmental management that we have been looking for over the past 30 years. With climate change and biodiversity in particular, the interaction between social, environmental and economic factors is too complex to even imagine that a single instrument or system could ever apply universally.<sup>90</sup> The potential positive impacts mean that they are simply too valuable to ignore though, and these instruments should play a central role in future environmental law developments.

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<sup>87</sup> United Nations Environment Program, *Global Environment Outlook 3: Past, present and future perspectives* (2002).

<sup>88</sup> Ralf Buckley, 'Green taxes: legal and policy issues in using economic instruments for environmental management' (1991) 2(1) *Revenue Law Journal* 27.

<sup>89</sup> P. N. Grabosky, 'Green markets: Environmental regulation by the private sector' (1994) 16(4) *Law and Policy* 419.

<sup>90</sup> K. Turner and H. Opschoor, 'Environmental economics and environmental policy instruments: Introduction and overview' in K. Turner and H. Opschoor (eds), *Economic incentives and environmental policies: Principles and practice* (1994).

However, with salinity credits already being traded, carbon credits on the way and the potential for biodiversity credits in the not too distant future, the question does arise as to whether the need for integration goes away, once they all enter the market.

In other words, the market prices for each environmental commodity would presumably have built into them, the relevant externalities that integration may otherwise be designed to address. The argument put forward here though is that integration still retains its importance, because without it, the market would be free to price those externalities without reference to one another, something that a regulatory constrained integrated system would be able to address.

More importantly, the point made throughout this paper has been that there is no one solution to any of these problems. Market instruments should not be the only tool used and in some cases the traditional, independent 'command and control' structures of legislation may retain some relevance for aspects of environmental management. At all levels, integration between systems and across environmental issues should remain a relevant consideration.

## **Integration in Practice – Some Practices and Experience**

### **More on the Australian Experience**

As discussed earlier in the paper the AGO, as Australia's foremost government consultant on the Kyoto Protocol, has recognised the potentially far-reaching impact of climate change issues. However, it is clear that its mandate is to deal with emissions trading, not to address the opportunities for integration. At a more basic level though, early participants are recognising the need for and benefits of relationships between various environmental strategies.

In June 2000, a major electricity company Integral Energy, agreed with NSW State Forests to invest in the re-creation of 5 hectares of a significant threatened ecological community known as Cumberland Plain Woodland, on State Government land near Sydney. In return, Integral Energy retains all future benefits associated with carbon sequestration. The parties

specifically agreed to and recognised the community benefits that are also intended to be generated by this project, including increased salinity control and biodiversity enhancement.<sup>91</sup>

Policy suggestions in recent years have also seen the Commonwealth Department of Primary Industries & Environment, discuss the merits of a Natural Resource Management trading scheme, where a central agency manages “credit pools” of ecosystem services for carbon, cleaner water and lower water tables, dryland salinity and biodiversity products.<sup>92</sup>

To ensure that these do not remain as "one-off" instances however, it will be essential to have a strong legislative base to make such wide ranging environmental investments more economically attractive than traditional management practices. The development of climate change law in Australia is in its formative stages – an ideal time in which to successfully create a legal system that integrates climate change considerations with other environmental problems.

### **International Systems Development**

Early emissions trading experience from other countries is also suggesting that just getting the greenhouse side of things right is taking up most of peoples’ thoughts. While there has certainly been some policy consideration of the issues, the proposed and trial emissions trading systems for Denmark, Sweden, Norway, the United Kingdom and the European Union, are almost entirely limited in scope to greenhouse gas considerations, and requirements for implementing the Kyoto Protocol commitments.<sup>93</sup>

### **Potential Conflicts in Integration**

The creation of a successfully integrated system involving emissions trading, requires close consideration of the potential conflicts that could arise from attempts to integrate what

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<sup>91</sup> See NSW State Forests, *Integral grows Western Sydney's first greenhouse forest*, Press Release, (5 June 2000).

<sup>92</sup> Department of Agriculture Fisheries and Forestry Australia, 'Market-Based Incentives for Natural Resource Management', (2001) <<http://www.dpie.gov.au/docs/nrm/actionplan/trading-system.html>>, accessed 28 April 2001.

<sup>93</sup> A review of the main elements of these various proposals can be found in Asbjorn Torvanger *et al*, *The state of climate research and climate policy*, prepared for Center for International Climate and Environmental Research, (May 2001).

initially appear to be vastly different systems of environmental regulation. After all if it was easy to do, it is more than likely that the piecemeal approach to environmental regulation would have been phased out a long time ago.

### **Polluter Pays**

The polluter pays principle has been entrenched in many areas of environmental law enforcement, and is increasingly finding its way into Australian policy.<sup>94</sup> This may appear to sit well with many aspects of climate change and salinity, but is almost nonsensical in biodiversity terms.

Disparity in these sort of underlying principles needs to be taken into account in legislative scheme design, particularly in choosing appropriate enforcement mechanisms. At the same time, there needs to be an awareness that even these principles can vary from situation to situation, with some modelling of potential emissions trading schemes suggesting that the polluter pays principle may have little to do with how trades and bargains are reached.<sup>95</sup>

### **Institutional Conflicts**

Responsibility for achieving the objectives of various environmental policies will be shared between ministries and organisations. In almost all circumstances, these organisations will be competing for limited resources or lacking in necessary institutional links, and despite even the best intentions, are highly likely to end up working at odds to each other.<sup>96</sup>

In theory, all that is required is to bring the relevant institutions together (or create them if necessary) with the aim of working towards a set of integrated goals across each of their relevant environmental areas.<sup>97</sup> However, some social systems researchers have suggested that in practice, within distinct 'sub-systems' such as government departments, members

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<sup>94</sup> Mary Ryllis-Clark, 'Guarded support for EPA proposal' (1993) 8(11) *Australian Environment Review* 3.

<sup>95</sup> Z. Chen, 'Negotiating an Agreement on Global Warming: A Theoretical Analysis' (1997) 32(2) *Journal of Environmental Economics and Management* 170.

<sup>96</sup> United Nations Development Program, *Synergies in International Implementation: The Rio Agreements*, (1997).

<sup>97</sup> See the recommendation of the Institutional Working group from the Synergies Expert Meeting of March 1997, reproduced at United Nations Development Program, *Synergies in International Implementation: The Rio Agreements*, (1997) 20.

often find it difficult or impossible to set aside their own view of reality, to comprehend that of members of other sub-systems.<sup>98</sup> In other words, communication between departments will always be tainted by some degree of self-reference, or the ‘I’ll do what you want if you do what I want’ syndrome.<sup>99</sup>

### **Current Regulatory Arrangements**

As raised earlier, Australia's constitutional system means that the Commonwealth has traditionally played a limited role in environmental regulation, with the States developing their own largely independent systems. Wildlife for example, is heavily regulated across Australia generally on the basis that dealings are prohibited unless specifically approved.<sup>100</sup> Each jurisdiction is different though, and the experience of wildlife operators has shown that there are a number of inconsistencies, both actual and in the way the legislation is interpreted.<sup>101</sup>

This does not limit state-wide integration of legislation in itself, but could present a significant barrier to integration of a broader nature, which is arguably necessary for managing all of the issues discussed in this paper, none of which are constrained by state borders.

### **A Brief Look Into the Future**

The United Kingdom, Denmark, the European Union, NSW and a growing number of other jurisdictions have all developed emissions trading systems, to a large extent independently of each other. While the existence of these schemes is great news in itself, one clear risk is that future harmonisation to allow international trade between the schemes may be impossible or simply too costly, leading to a reduction in the international trades that would otherwise

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<sup>98</sup> N. Luhmann, *Ecological Communication* (1989).

<sup>99</sup> N. Luhmann, *Political Theory and the Welfare State* (1990).

<sup>100</sup> See for example *National Parks & Wildlife Act 1974* (NSW) and the *Nature Conservation Act 1992* (Qld).

<sup>101</sup> B. Aretino *et al*, *Creating Markets for Biodiversity: A Case Study of Earth Sanctuaries Pty Limited*, Staff Research Paper, prepared for Productivity Commission (Cth), (2001).

occur.<sup>102</sup> “The consequence of this reduction in trading will be increased compliance costs and potentially less investment in emissions reduction activities.”<sup>103</sup>

It may seem to be a conceptual leap from a comparison of international markets for what is essentially the same good, to an analysis of the various environmental markets within Australia’s borders. However, the underlying problem, which relates to the fact that regulatory and policy systems are developing independently of one another and to a large extent without consideration of the potential for integration, remains the same at either scale.

Simply put, if Australian climate change policy is allowed to continue on what is currently a largely independent path of development, there are likely to be not only difficulties in integration with other environmental management systems at a later date, but real and direct conflicts.

Ultimately, our attempt to try and avert catastrophic climate change is unlike any attempt we have ever made before. The tendency of institutions to tackle new problems and base their future actions around past trends and systems,<sup>104</sup> will simply not work in these circumstances. Piecemeal legislation has largely worked in the past because based on our levels of knowledge, the issues appeared at least on the surface to be piecemeal problems. With a growing body of theoretical and practical experience that says this will rarely work<sup>105</sup> and clear evidence about the way in which climate change interacts with almost every aspect of our society and environment, it is clear that integration has a key role to play in the future of climate policy development.

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<sup>102</sup> Richard Rosenzweig *et al*, *The Emerging International Greenhouse Gas Market*, prepared for Pew Center on Global Climate Change, (March 2002).

<sup>103</sup> *Ibid.*, 35.

<sup>104</sup> E. De Bono, *Parallel Thinking* (1994).

<sup>105</sup> D. Monsma and J. Mazurek, 'Stepping Stones, Step Change and Climate Change: Why Muddling Through is Insufficient' (1999) 6(4) *Corporate Environmental Strategy* 368.